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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _26 July 2004_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-21_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-21_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _22 February 2000_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Introduction

1.   This communication is in response to the Applicants' Response mailed on July 26, 2004. Claims 1-21 of the application are pending. This office action is made final.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-3, 6-12, 17 and 19 use the terms "adapted to" and/or "capable of" as part of the claim limitations indicating what the apparatus/method could do. 35 U.S.C. 112, second paragraph requires that the inventors distinctly claim what their invention does. The use the terms "adapted to" and/or "capable of" as part of the claim limitations make the claims vague and indefinite, as it is not clear as to what the invention actually does.

Claims rejected but not specifically addressed are rejected based on their

dependency on rejected claims.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

5.   The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

6.   Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Santoline et**

al. (SA) (PCT WO 97/38362) in view of **Admitted prior art (AD)**, and further in view of

Brown et al. (BR) (U.S. Patent 6, 377,859) and **Bowling (BO)** (PCT WO 97/45778).

6.1   **SA** teaches a stimulated simulator for a distributed process control system. Specifically,

as per claim 1, **SA** teaches an apparatus adapted to be used with a distributed process control

system having a user workstation remotely located from a distributed controller that controls one

or more field devices using control modules (Fig. 1, Item 21; Page 1, Lines 2-3; Page 1, Lines 9-

13 and Page 6, Lines 10-12); the apparatus comprising:

        a computer having a memory and a processing unit (Fig. 1, Item 21; Page 6, Lines 10-

12).

        SA does not expressly teach a configuration application stored in the memory of the

computer and adapted to be executed on the processing unit of the computer, wherein the

configuration application is capable of being executed on the user workstation to create control

modules for execution by the distributed controller. **AD** teaches a configuration application

stored in the memory of the computer and adapted to be executed on the processing unit of the

computer, wherein the configuration application is capable of being executed on the user

workstation to create control modules for execution by the distributed controller (Fig. 1, Items 34

and 25; Page 8 describing prior art Fig. 1, L23-26; Page 2, L14-17), as that enables users to

create or change process control modules (Page 2, L15-16; Page 8 describing prior art Fig. 1,

L25-26) and test the control modules used by the controller applications (Page 8 describing prior

art Fig. 1, L22) using simulation applications on the personal computer (Page 8 describing prior

art Fig. 1, L 15-16). It would have been obvious to one of ordinary skill in the art at the time of

Applicants' invention to modify the apparatus of **SA** with the apparatus of **AD** that included a

configuration application stored in the memory of the computer and adapted to be executed on

the processing unit of the computer, wherein the configuration application is capable of being executed on the user workstation to create control modules for execution by the distributed controller, as that would enable users to create or change process control modules and test the control modules used by the controller applications using simulation applications on the personal computer.

SA does not expressly teach that at least one of the control modules communicates with a further module in a device separated from the distributed controller to perform a control activity. BR teaches that at least one of the control modules communicates with a further module in a device separated from the distributed controller to perform a control activity (CL2, L1-25), as that allows devices made by different manufacturers to interoperate, the process control to be decentralized and the distributed control systems to be simplified (Col 2, Lines 1- 14; Lines 14-25). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the apparatus of SA with the apparatus of BR that included at least one of the control modules communicating with a further module in a device separated from the distributed controller to perform a control activity, as that would allow devices made by different manufacturers to interoperate, the process control to be decentralized and the distributed control systems to be simplified.

SA does not expressly teach a controller application stored in the memory of the computer and adapted to be executed on the processing unit of the computer. BO teaches a controller application stored in the memory of the computer and adapted to be executed on the processing unit of the computer (Page 2, Para 3; Page 4, Para 2), as that facilitates the design and test of a part or the overall control of the industrial plant (Page 2, Para 2) and design, test and

verification of various control system strategies in a comprehensive manner without using the

communication network or data highway (Page 4, Para 3). It would have been obvious to one of

ordinary skill in the art at the time of Applicants' invention to modify the apparatus of **SA** with

the apparatus of **BO** that included a controller application stored in the memory of the computer

and adapted to be executed on the processing unit of the computer, as that would facilitate the

design and test of a part or the overall control of the industrial plant and design, test and

verification of various control system strategies in a comprehensive manner without using the

communication network or data highway.

SA teaches that the controller application is further adapted to be executed on the

distributed controller to implement the one of the control modules during operation of the

distributed process control system (Page 1, L9-13). **SA** does not expressly teach that the

controller application is further adapted to communicate with the further module to perform the

control activity. **BR** teaches that the controller application is further adapted to communicate

with the further module to perform the control activity (CL2, L1-25), as that allows devices

made by different manufacturers to interoperate, the process control to be decentralized and the

distributed control systems to be simplified (Col 2, Lines 1- 14; Lines 14-25). It would have

been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the

apparatus of **SA** with the apparatus of **BR** that included the controller application further adapted

to communicate with the further module to perform the control activity, as that would allow

devices made by different manufacturers to interoperate, the process control to be decentralized

and the distributed control systems to be simplified.

SA does not expressly teach that the configuration application, when executed on the computer, is further adapted to create the one of the control modules capable of being used by the distributed controller within the distributed process control system. **AD** teaches that the configuration application, when executed on the computer, is further adapted to create the one of the control modules capable of being used by the distributed controller within the distributed process control system (Fig. 1, Items 34 and 25; Page 8 describing prior art Fig. 1, L23-26; Page 2, L14-17), as that enables users to create or change process control modules (Page 2, L15-16; Page 8 describing prior art Fig. 1, L25-26) and test the control modules used by the controller applications (Page 8 describing prior art Fig. 1, L22) using simulation applications on the personal computer (Page 8 describing prior art Fig. 1, L 15-16). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the apparatus of **SA** with the apparatus of **AD** that included the configuration application, when executed on the computer, is further adapted to create the one of the control modules capable of being used by the distributed controller within the distributed process control system, as that would enable users to create or change process control modules and test the control modules used by the controller applications using simulation applications on the personal computer.

SA does not expressly teach that the controller application is adapted to cause execution of the one of the control modules within the computer to simulate the operation of the one of the control modules to thereby simulate operation of the distributed process control system. **BO** teaches that the controller application is adapted to cause execution of the one of the control modules within the computer to simulate the operation of the one of the control modules to thereby simulate operation of the distributed process control system (Page 2, Para 3; Page 4, Para

2), as that facilitates the design and test of a part or the overall control of the industrial plant

(Page 2, Para 2) and design, test and verification of various control system strategies in a

comprehensive manner while avoiding the need for users to design/engineer around their current

control system's proprietary communication network or data highway (Page 4, Para 3), by

providing API designed to allow the actual device control software to operate in a non-

proprietary communication environment (Page 4, Para 2). It would have been obvious to one of

ordinary skill in the art at the time of Applicants' invention to modify the apparatus of **SA** with

the apparatus of **BO** that included the controller application adapted to cause execution of the

one of the control modules within the computer to simulate the operation of the one of the

control modules to thereby simulate operation of the distributed process control system, as that

would facilitate the design and test of a part or the overall control of the industrial plant and

design, test and verification of various control system strategies in a comprehensive manner

while avoiding the need for users to design/engineer around their current control system's

proprietary communication network or data highway, by providing API designed to allow the

actual device control software to operate in a non-proprietary communication environment.

  SA does not expressly teach that the controller application is adapted to cause execution

including communicating with the further module. **BR** teaches that the controller application is

adapted to cause execution including communicating with the further module (CL2, L1-25), as

that allows devices made by different manufacturers to interoperate, the process control to be

decentralized and the distributed control systems to be simplified (Col 2, Lines 1- 14; Lines 14-

25). It would have been obvious to one of ordinary skill in the art at the time of Applicants'

invention to modify the apparatus of **SA** with the apparatus of **BR** that included the controller

application being adapted to cause execution including communicating with the further module,

as that would allow devices made by different manufacturers to interoperate, the process control

to be decentralized and the distributed control systems to be simplified.

6.2   As per Claim 2, **SA, AD, BR** and **BO** teach the apparatus of claim 1. **SA** does not

expressly teach that the configuration application is adapted to create a user interface for use in

displaying information to a user, and further includes a viewing application stored in the memory

of the computer and adapted to be executed on the processing unit of the computer, wherein the

viewing application is adapted to use the user interface to display information pertaining to the

one of the control modules to a user. **AD** teaches that the configuration application is adapted to

create a user interface for use in displaying information to a user (Page 2, L17-19), and further

includes a viewing application stored in the memory of the computer and adapted to be executed

on the processing unit of the computer (Page 8 describing prior art Fig. 1, L23-26), wherein the

viewing application is adapted to use the user interface to display information pertaining to the

one of the control modules to a user (Page 2, L22-25 and L18-20), as that enables a user to

change settings such as set points within the process control routine and display the data to a user

(Page 2, L19-20); and enables changes to be made to the user interface and the user interfaces

used by the viewing applications to be tested (Page 8 describing prior art Fig. 1, L22-26). It

would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to

modify the apparatus of **SA** with the apparatus of **AD** that included the configuration application

adapted to create a user interface for use in displaying information to a user, and further included

a viewing application stored in the memory of the computer and adapted to be executed on the

processing unit of the computer, wherein the viewing application was adapted to use the user

interface to display information pertaining to the one of the control modules to a user, as that

would enable a user to change settings such as set points within the process control routine and

display the data to a user and enable changes to be made to the user interface and the user

interfaces used by the viewing applications to be tested.

6.3   As per Claim 3, **SA, AD, BR** and **BO** teach the apparatus of claim 1. **SA** does not

expressly teach that the apparatus further includes a configuration database application stored in

the memory of the computer and adapted to be executed on the processing unit of the computer,

wherein the configuration database application is adapted to communicate with the controller

application within the computer to manage a configuration database. **AD** teaches that the

apparatus further includes a configuration database application stored in the memory of the

computer and adapted to be executed on the processing unit of the computer (Page 2, L29 to

Page 3, L3; Page 4, L21-24), wherein the configuration database application is adapted to

communicate with the controller application within the computer to manage a configuration

database (Page 8 describing prior art Fig. 1, L12-14), as that would reduce the amount of

hardware required by designing the system so that the configuration database application runs on

the same PC as the control application and the viewing application (Page 4, L21-24). It would

have been obvious to one of ordinary skill in the art at the time of Applicants' invention to

modify the apparatus of **SA** with the apparatus of **AD** that included the apparatus further

including a configuration database application stored in the memory of the computer and adapted

to be executed on the processing unit of the computer, wherein the configuration database

application was adapted to communicate with the controller application within the computer to manage a configuration database, as that would reduce the amount of hardware required by designing the system so that the configuration database application runs on the same PC as the control application and the viewing application.

6.4   As per Claim 4, **SA, AD, BR** and **BO** teach the apparatus of claim 1. **SA** does not expressly teach that the controller application includes an execution rate parameter specifying the rate of execution of the one of the control modules within the computer. **BO** teaches that the controller application includes an execution rate parameter specifying the rate of execution of the one of the control modules within the computer (abstract; Page 2, Para 2; Page 4, Para 2), as that facilitates running the control procedures of the plant at a rate faster or slower than real time and the design and test of a part or the overall control of the industrial plant (Page 2, Para 2) and design, test and verification of various control system strategies in a comprehensive manner using appropriate simulation models (Page 4, Para 3). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the apparatus of **SA** with the apparatus of **BO** that included the controller application including an execution rate parameter specifying the rate of execution of the one of the control modules within the computer, as that would facilitate running the control procedures of the plant at a rate faster or slower than real time and the design and test of a part or the overall control of the industrial plant and design, test and verification of various control system strategies in a comprehensive manner using appropriate simulation models.

6.5   As per Claim 5, **SA, AD, BR** and **BO** teach the apparatus of claim 4. **SA** does not

expressly teach that the execution rate parameter can be set to be greater than or less than a real

time execution rate of the one of the control modules when the one of the control modules is

executed within the distributed controller of the distributed process control system. **BO** teaches

that the execution rate parameter can be set to be greater than or less than a real time execution

rate of the one of the control modules when the one of the control modules is executed within the

distributed controller of the distributed process control system (Page 2, Para 2), as that would

allow the design, test and verification of control system strategies in a more comprehensive

manner using appropriate simulation models (Page 4, Para 3). It would have been obvious to one

of ordinary skill in the art at the time of Applicants' invention to modify the apparatus of **SA**

with the apparatus of **BO** that included the execution rate parameter to be set to be greater than

or less than a real time execution rate of the one of the control modules when the one of the

control modules was executed within the distributed controller of the distributed process control

system, as that would allow the design, test and verification of control system strategies in a

more comprehensive manner using appropriate simulation models.

6.6   As per Claim 6, **SA, AD, BR** and **BO** teach the apparatus of claim 1. **SA** does not

expressly teach that the configuration application is adapted to create a further control module

capable of being executed within the distributed controller during operation of the distributed

process control system. **AD** teaches that the configuration application is adapted to create a

control module capable of being executed within the distributed controller during operation of

the distributed process control system (Page 2, L14-17), as that enables users to create or change

process control modules used in the dedicated distributed controller (Page 2, L15-16; Page 8

describing prior art Fig. 1, L25-26). It would have been obvious to one of ordinary skill in the

art at the time of Applicants' invention to modify the apparatus of **SA** with the apparatus of **AD**

that included the configuration application adapted to create a control module capable of being

executed within the distributed controller during operation of the distributed process control

system, as that would enable users to create or change process control modules used in the

dedicated distributed controller.

SA does not expressly teach that that the configuration application is adapted to create a

further control module capable of being executed within the distributed controller during

operation of the distributed process control system. **BR** teaches that the distributed controller is

adapted to use a further control module capable of being executed within the distributed

controller during operation of the distributed process control system (CL2, L1-25), as that allows

devices made by different manufacturers to interoperate, the process control to be decentralized

and the distributed control systems to be simplified (Col 2, Lines 1- 14; Lines 14-25). It would

have been obvious to one of ordinary skill in the art at the time of Applicants' invention to

modify the apparatus of **SA** and **AD** with the apparatus of **BR** that included configuration

application adapted to create a further control module capable of being executed within the

distributed controller, as that would allow users to create or change process control modules used

in devices made by different manufacturers in the dedicated distributed controller.

6.7   As per Claim 7, **SA, AD, BR** and **BO** teach the apparatus of claim 1. **SA** does not

expressly teach that the configuration application is adapted to create the further module capable

of being executed within one of the field devices communicatively connected to the distributed

controller during the operation of the distributed process control system. **AD** teaches that the

configuration application is adapted to create the control module capable of being executed

within one of the field devices communicatively connected to the distributed controller during

the operation of the distributed process control system (Page 7 describing prior art Fig. 1, L29 to

Page 8 describing prior art Fig. 1, L2), as that enables users to create or change process control

modules used in the field devices (Page 7 describing prior art Fig. 1, L29 to Page 8 describing

prior art Fig. 1, L2). It would have been obvious to one of ordinary skill in the art at the time of

Applicants' invention to modify the apparatus of **SA** with the apparatus of **AD** that included the

configuration application adapted to create a control module capable of being executed within

one of the field devices communicatively connected to the distributed controller during the

operation of the distributed process control system, as that would enable users to create or

change process control modules used in the field devices.

SA does not expressly teach that that the configuration application is adapted to create the

further module capable of being executed within one of the field devices communicatively

connected to the distributed controller during the operation of the distributed process control

system. **BR** teaches that the distributed controller is adapted to use a further control module

capable of being executed within the distributed controller during operation of the distributed

process control system (CL2, L1-25), as that allows devices made by different manufacturers to

interoperate, the process control to be decentralized and the distributed control systems to be

simplified (Col 2, Lines 1- 14; Lines 14-25). It would have been obvious to one of ordinary skill

in the art at the time of Applicants' invention to modify the apparatus of **SA** and **AD** with the

apparatus of **BR** that included configuration application adapted to create the further module capable of being executed within one of the field devices communicatively connected to the distributed controller during the operation of the distributed process control system, as that would allow users to create or change process control modules used in devices made by different manufacturers in the dedicated distributed controller.

6.8   As per Claim 8, **SA, AD, BR** and **BO** teach the apparatus of claim 1. **SA** does not expressly teach a simulation application stored in the memory of the computer and adapted to be executed on the processing unit of the computer, wherein the simulation application is adapted to communicate with the controller application within the computer to simulate the operation of the distributed process control system. **BO** teaches a simulation application stored in the memory of the computer and adapted to be executed on the processing unit of the computer, wherein the simulation application is adapted to communicate with the controller application within the computer to simulate the operation of the distributed process control system (Page 2, Para 3; Page 4, Para 2), as that facilitates the design and test of a part or the overall control of the industrial plant (Page 2, Para 2); design, test and verification of various control system strategies in a comprehensive manner without using the communication network or data highway (Page 4, Para 3); and allows the actual device control software to operate at a rate slower or faster than real time and provides the capability to arbitrarily stop and start the controller software's operation (Page 4, Para 2). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the apparatus of **SA** with the apparatus of **BO** that included a simulation application stored in the memory of the computer and adapted to be

executed on the processing unit of the computer, wherein the simulation application is adapted to

communicate with the controller application within the computer to simulate the operation of the

distributed process control system, as that would facilitate the design and test of a part or the

overall control of the industrial plant; design, test and verification of various control system

strategies in a comprehensive manner without using the communication network or data

highway; and would allow the actual device control software to operate at a rate slower or faster

than real time and provide the capability to arbitrarily stop and start the controller software's

operation.

6.9   As per Claim 9, **SA, AD, BR** and **BO** teach the apparatus of claim 1. **SA** teaches that the

controller application is adapted to communicate with the field devices through an input/output

device when the controller application is executed within the distributed controller (Page 1, L9-

13; Page 3, Lines 27-33).

6.10   As per Claim 10, **SA, AD, BR** and **BO** teach the apparatus of claim 1. **SA** does not

expressly teach that the controller application is capable of communicating with a further

controller that is of a different type than the distributed controller of the distributed process

control system. **BR** teaches that the controller application is capable of communicating with a

further controller that is of a different type than the distributed controller of the distributed

process control system (CL2, L1-25), as that allows devices made by different manufacturers to

interoperate, the process control to be decentralized and the distributed control systems to be

simplified (CL2, L1-25). It would have been obvious to one of ordinary skill in the art at the

time of Applicants' invention to modify the apparatus of **SA** with the apparatus of **BR** that

included the controller application capable of communicating with a further controller that was

of a different type than the distributed controller of the distributed process control system, as that

would allow devices made by different manufacturers to interoperate, the process control to be

decentralized and the distributed control systems to be simplified.

6.11   As per Claim 11, **SA, AD, BR** and **BO** teach the apparatus of claim 10. **SA** does not

expressly teach a viewing application stored in the memory of the computer and adapted to be

executed on the processing unit of the computer, wherein the viewing application is adapted to

communicate with the controller application and to use a user interface to display information

sent from the further controller. **AD** teaches a viewing application stored in the memory of the

computer and adapted to be executed on the processing unit of the computer (Page 8 describing

prior art Fig. 1, L23-26), wherein the viewing application is adapted to communicate with the

controller application and to use a user interface to display information sent from the controller

(Page 2, L22-25), as that enables the user interfaces used by the viewing applications to be tested

(Page 8 describing prior art Fig. 1, L22-26); and enables a user to change settings such as set

points within the process control routine and display the data to a user (Page 2, L19-20). It

would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to

modify the apparatus of **SA** with the apparatus of **AD** that included a viewing application stored

in the memory of the computer and adapted to be executed on the processing unit of the

computer, wherein the viewing application is adapted to communicate with the controller

application and to use a user interface to display information sent from the controller, as that

would enable the user interfaces used by the viewing applications to be tested and enable a user

to change settings such as set points within the process control routine and display the data to a

user.

SA does not expressly teach that the viewing application is adapted to use a user interface

to display information sent from the further controller. **BR** teaches that the distributed controller

is adapted to use a further control module capable of being executed within the distributed

controller during operation of the distributed process control system (CL2, L1-25), as that allows

devices made by different manufacturers to interoperate, the process control to be decentralized

and the distributed control systems to be simplified (Col 2, Lines 1- 14; Lines 14-25). It would

have been obvious to one of ordinary skill in the art at the time of Applicants' invention to

modify the apparatus of **SA** and **AD** with the apparatus of **BR** that included the viewing

application is adapted to use a user interface to display information sent from the further

controller, as that would allow the user interfaces used by the viewing applications to be tested

and enable a user to change settings such as set points within the process control routine and

display the data to a user, when further controller is used with the distributed control system.

6.12   As per Claims 12-18, these are rejected based on the same reasoning as Claims 1-5 and 7-

8, <u>supra.</u> Claims 12-18 are method claims reciting the same limitations as Claims 1-5 and 7-8, as

taught throughout by **SA, AD, BR** and **BO.**

6.13   As per Claim 19, **SA** teaches an apparatus adapted to be used in conjunction with a

distributed process control system having a user workstation remotely located from a distributed

controller that controls one or more field devices using control modules (Fig. 1, Item 21; Page 1,

Lines 2-3; Page₁1, Lines 9-13 and Page 6, Lines 10-12); the apparatus comprising:

a computer having a memory and a processing unit and a display connected to the

computer (Fig. 1, Item 21; Page 6, Lines 10-12); and

the controller application is adapted to be executed on the distributed controller to

implement a control module during operation of the distributed process control system (Page 1,

L9-13).

SA does not expressly teach a controller application stored in the memory of the

computer and adapted to be executed on the processing unit of the computer. BO teaches a

controller application stored in the memory of the computer and adapted to be executed on the

processing unit of the computer (Page 2, Para 3; Page 4, Para 2), as that facilitates the design and

test of a part or the overall control of the industrial plant (Page 2, Para 2) and design, test and

verification of various control system strategies in a comprehensive manner without using the

communication network or data highway (Page 4, Para 3). It would have been obvious to one of

ordinary skill in the art at the time of Applicants' invention to modify the apparatus of SA with

the apparatus of BO that included a controller application stored in the memory of the computer

and adapted to be executed on the processing unit of the computer, as that would facilitate the

design and test of a part or the overall control of the industrial plant and design, test and

verification of various control system strategies in a comprehensive manner without using the

communication network or data highway.

SA does not expressly teach that the controller application is capable of communicating with a further controller that is of a different type than the distributed controller of the distributed process control system. BR teaches that the controller application is capable of communicating with a further controller that is of a different type than the distributed controller of the distributed process control system (Col 2, Lines 14-25), as that allows devices made by different manufacturers to interoperate and the process control industry to decentralize process control and simplify the distributed control systems (Col 2, Lines 1- 14; Lines 14-25). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the apparatus of SA with the apparatus of BR that included the controller application capable of communicating with a further controller that was of a different type than the distributed controller of the distributed process control system, as that would allow devices made by different manufacturers to interoperate and the process control industry to decentralize process control and simplify the distributed control systems.

SA does not expressly teach a viewing application stored in the memory of the computer and adapted to be executed on the processing unit of the computer, wherein the viewing application is adapted to communicate with the controller application and to use a user interface to display information sent from the further controller. AD teaches a viewing application stored in the memory of the computer and adapted to be executed on the processing unit of the computer (Page 8 describing prior art Fig. 1, L23-26), wherein the viewing application is adapted to communicate with the controller application and to use a user interface to display information sent from the controller (Page 2, L22-25), as that enables the user interfaces used by the viewing applications to be tested (Page 8 describing prior art Fig. 1, L22-26); and enables a user to

change settings such as set points within the process control routine and display the data to a user

(Page 2, L19-20). It would have been obvious to one of ordinary skill in the art at the time of

Applicants' invention to modify the apparatus of **SA** with the apparatus of **AD** that included a

viewing application stored in the memory of the computer and adapted to be executed on the

processing unit of the computer, wherein the viewing application is adapted to communicate with

the controller application and to use a user interface to display information sent from the

controller, as that would enable the user interfaces used by the viewing applications to be tested

and enable a user to change settings such as set points within the process control routine and

display the data to a user.

SA does not expressly teach that the viewing application is adapted to use a user interface

to display information sent from the further controller. **BR** teaches that the distributed controller

is adapted to use a further control module capable of being executed within the distributed

controller during operation of the distributed process control system (CL2, L1-25), as that allows

devices made by different manufacturers to interoperate, the process control to be decentralized

and the distributed control systems to be simplified (Col 2, Lines 1- 14; Lines 14-25). It would

have been obvious to one of ordinary skill in the art at the time of Applicants' invention to

modify the apparatus of **SA** and **AD** with the apparatus of **BR** that included the viewing

application is adapted to use a user interface to display information sent from the further

controller, as that would allow the user interfaces used by the viewing applications to be tested

and enable a user to change settings such as set points within the process control routine and

display the data to a user, when further controller is used with the distributed control system.

6.14   As per Claim 20, **SA, AD, BR** and **BO** teach the apparatus of claim 19. **SA** does not expressly teach the apparatus further including an interface connected between the further controller and the controller application. **BR** teaches the apparatus further including an interface connected between the further controller and the controller application (Col 2, Lines 14-25), as that allows devices made by different manufacturers to communicate with one another and interoperate to effect decentralized control within a process (Col 2, Lines 1- 14; Lines 14-25). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the apparatus of **SA** with the apparatus of **BR** that included the apparatus further including an interface connected between the further controller and the controller application, as that would allow devices made by different manufacturers to communicate with one another and interoperate to effect decentralized control within a process.

6.15   As per Claim 21, **SA, AD, BR** and **BO** teach the apparatus of claim 20. **SA** does not expressly teach the apparatus wherein the interface is an OPC interface. **BR** teaches the apparatus wherein the interface is an OPC interface (Col 2, Lines 14-25), as that allows devices made by different manufacturers to communicate with one another and interoperate to effect decentralized control within a process (Col 2, Lines 1- 14; Lines 14-25). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the apparatus of **SA** with the apparatus of **BR** that included the apparatus wherein the interface is an OPC interface, as that would allow devices made by different manufacturers to communicate with one another and interoperate to effect decentralized control within a process.

Response to Arguments

7.   Applicants' arguments filed on July 26, 2004 have been fully considered. Applicants'

arguments, filed on July 26, 2004 under 35 U.S.C. §103 (a) are not persuasive.

8.   As per the applicants' arguments, the applicants' attention is requested to the

corresponding claim rejections. In addition, the following explanation is provided to further

explain the examiner's position.

8.1   As per the applicants' argument that "Claim 1 recites, in part, "wherein the controller

application is adapted to cause execution of the one of the control modules within the computer

to simulate the operation of the one of the control modules including communicating with the

further module to thereby simulate operation of the distributed process control system"; the

Examiner relies solely upon Bowling with respect to these elements of Claim 1 ...and the

Examiner states that Bowling allows the "design, test and verification of various control system

strategies in a comprehensive manner without using the communication network or data

highway";... in contrast to the Examiner's assertion, Bowling indicates that users can simulate a

control device while avoiding the need to design around a proprietary communication network or

data highway, not that no communications network is present; indeed, Bowling states that "the

invention provides an API ... to exercise the control algorithm program code; the API is designed

to allow the actual device controller software to operate in a non-proprietary communication's

environment"; therefore, Applicants respectfully submit that Bowling does not teach or suggest these elements of Claim 1", the examiner agrees with the applicants that Bowling indicates that users can simulate a control device while avoiding the need to design around a proprietary communication network or data highway; the invention provides an API ... to exercise the control algorithm program code; and the API is designed to allow the actual device controller software to operate in a non-proprietary communication's environment.

However, the Examiner respectfully disagrees with the applicants that Bowling does not teach or suggest "wherein the controller application is adapted to cause execution of the one of the control modules within the computer to simulate the operation of the one of the control modules including communicating with the further module to thereby simulate operation of the distributed process control system". Bowling teaches that the controller application is adapted to cause execution of the one of the control modules within the computer to simulate the operation of the one of the control modules to thereby simulate operation of the distributed process control system (Page 2, Para 3; Page 4, Para 2).

8.2   As per the applicants' argument that "a proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference; AD specifically notes that "with the system of Fig. 1, the controller application 23 and the process control modules 24 are loaded into and executed by the dedicated controller 12 and/or the field device 15 before the simulation application 36 can be used"; to modify AD into a system "wherein the controller application is adapted to cause execution of the one of the control modules within the computer to simulate the operation of the one of the control modules

including communicating with the further module to thereby simulate operation of the distributed

process control system", as recited, in part, by Claim 1, would fundamentally change the

operating principles of the system of Figure 1", the examiner respectfully disagrees.

The examiner directs the applicants' attention to the fact that in claim 1, the Santoline

reference has the apparatus forming the computer. **SA** does not expressly teach a configuration

application stored in the memory of the computer and adapted to be executed on the processing

unit of the computer. **AD** teaches a configuration application stored in the memory of the

computer and adapted to be executed on the processing unit of the computer (Fig. 1, Items 34

and 25; Page 8 describing prior art Fig. 1, L23-26; Page 2, L14-17), as that enables users to

create or change process control modules (Page 2, L15-16; Page 8 describing prior art Fig. 1,

L25-26) and test the control modules used by the controller applications (Page 8 describing prior

art Fig. 1, L22) using simulation applications on the personal computer (Page 8 describing prior

art Fig. 1, L 15-16). Therefore, it is the Santoline computer that is modified with the

configuration application of AD. That will not affect the operation of the system of Figure 1 in

AD.

8.3   As per the applicants' argument that "as AD specifically teaches separation of the control

modules and the control application from the computer, AD teaches directly away from the

Examiner's suggested use of Santoline, AD, Brown and Bowling to teach a system "wherein the

controller application is adapted to cause execution of the one of the control modules within the

computer" as recited, in part, by Claim 1; therefore, the combination of Santoline, AD, Brown

and Bowling is improper", the examiner respectfully disagrees. The examiner directs the

applicants' attention to the fact that it is the apparatus of Santoline that is modified by the

configuration application of AD and the controller application of Bowling as described in

Paragraph 4.1. Nowhere does AD teach that the configuration application of AD cannot be used

in another apparatus.

8.4   As per the applicants' argument that "while Bowling describes a first man-machine

interface (MMI) through which a device controller can be monitored and/or controlled and a

second MMI which can communicate with a simulation unit, Bowling does not disclose or

suggest a single MMI that can communicate with a controller application and display

information sent from a further controller; Bowling describes two separate MMIs: a first MMI

for the device controller and a second MMI for the simulation unit; in a similar manner, the mere

mention in the cited portions of Brown of decentralized process control systems and open

communication protocols that allow devices by different manufacturers to interoperate does not

appear to teach or suggest anything with respect to MMIs; as discussed above in association with

Claim 1, there is no motivation to combine Santoline, Bowling, Brown and AD; none of

Santoline, AD; Brown or Bowling teaches or suggests every element of Claim 19", the examiner

respectfully disagrees.

        The examiner directs the applicants' attention to the fact that the Examiner has not used

Bowling as reference for the user interface and the viewing application, but instead has used AD

as reference. **AD** teaches a viewing application stored in the memory of the computer and

adapted to be executed on the processing unit of the computer (Page 8 describing prior art Fig. 1,

L23-26), wherein the viewing application is adapted to communicate with the controller

application and to use a user interface to display information sent from the controller (Page 2,

L22-25), as that enables the user interfaces used by the viewing applications to be tested (Page 8

describing prior art Fig. 1, L22-26); and enables a user to change settings such as set points

within the process control routine and display the data to a user (Page 2, L19-20). AD uses the

same user interface to display information from the actual controller and the simulation modules.

Conclusion

ACTION IS FINAL

9.   Applicant's arguments with respect to claim rejections under 35 USC 103 (a) are not

persuasive. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is

703-305-0043, till October 27, 2004 and 571-272-3717 after October 27, 2004. The

examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kevin Teska, can be reached on (703) 305-9704, till October 27, 2004 and

571-272-3716 after October 27, 2004. The fax phone number for the organization

where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-305-

9600.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

K. Thangavelu
Art Unit 2123
October 1, 2004